

DETAILED ACTION

It is noted for the record that Examiner Wollschlager has assumed responsibility for this application from Examiner Sanders.

Response to Amendment

Applicant's amendment to the claims filed October 22, 2007 has been entered. Claims 12 and 18 are currently amended. Claims 1-11 have been canceled. Claims 12-21 are pending and under examination.

Claim Objections

Claims 14 and 15 are objected to because of the following informalities: the claims recite "the first axis". This is understood to refer to the axis of flow of the molten material, but the claims do not use proper antecedent language. Appropriate correction is required.

Drawings

Figures 4-6 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 12-14, 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Bailly (US 3,912,436).

Regarding claims 12 and 14, Bailly teaches a method of extruding plastic/molten material vertically downward through an opening in a die (Abstract) wherein a rotating lip/shaping knife, which is substantially planar in shape and has a longitudinal molding surface extending to a distal end thereof (Figure 6 (42)), is rotated, as required, about an axis that is non-parallel (e.g. it is perpendicular in Figure 6) to the flow of the molten plastic material. As the lip/knife rotates the profile of the sheet is changed by changing the contour/shape of the opening (Figure 6; Figure 9; Figure 2A and 2B; col. 3, lines 1-7; col. 4, line 1-col. 5, line 32; col. 6, lines 15-27; col. 7, lines 22-42).

As to claim 13, the material is plastic (Abstract; col. 1, lines 24-28).

As to claim 16, Bailly's shaping knives/lips are reasonably interpreted as being wedge shaped and the wedge portion cuts into the flow of molten material (Figure 6 (42)).

As to claim 17, Bailly rotates the lips/knives back and forth to produce the desired shape (Figure 9, for example).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 12-14, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paul et al. (US 5,424,018) in view of either of Lippert (US 5,511,962) or Sirevicius (US 3,860,383).

Regarding claim 12, Paul et al. teach a method of varying the width of an extruded sheet product wherein a pivoting arm/shaping knife (10) is pivoted/rotated about point A, which is perpendicular to the axis of flow of the extruding material. The pivoting arm is substantially planar in shape and has a longitudinal molding surface extending to a distal end (Figure 6; col. 1, lines 50-64; col. 2, line 44-col. 3, line 14). Paul et al. do not discuss edge profiles. However, Lippert teaches a method of extrusion wherein a plurality of plugs (100) (102) and (104) (Figure 3) are employed to control the edge profile of an extruded sheet and Sirevicius teaches a variety of edge profile blocks are known in the art (Figure 5-Figure 9).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Paul et al. and to have employed varying edge profile shapes as suggested by either of Lippert or Sirevicius for the purpose of producing a wide variety of viable products with desired edge profiles. The examiner notes that only the shape of Paul et al.'s pivot arm (10) and the quantity of pivoting arms are changed by the combination. The pivoting function and general planar shape of the pivoting arm of Paul et al. are not changed by the combination.

As to claim 13, Paul et al. extrude plastic (col. 1, lines 15-26).

As to claim 14, the pivot A is perpendicular to the axis of flow (Figure 6).

As to claim 16, the leading edge of Paul's arm (10) is reasonably interpreted as a wedge that cuts into the flow of material.

As to claim 17, Paul et al. move the arm (10) back and forth as required to produce the desired width product.

Claims 15 and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paul et al. (US 5,424,018) in view of either of Lippert (US 5,511,962) or Sirevicius (US 3,860,383), as applied to claims 12-14, 16 and 17, in view of Hayeshi et al. (US 5,240,664).

As to claim 15, the combination teaches the method set forth above. Paul does not teach rotating about an axis oblique to the flow of the resin. However, Hayeshi et al. teach and suggest that it is known in the art that plastic material may be deformed in various directions such as from an inclined/oblique direction, as required, to produce a desired shape (col. 7, lines 44-49).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the teaching of Paul et al. and to have

contacted the extruding polymer at various angles relative to the flow of molten material, including perpendicular to the flow and oblique/inclined to the flow since Hayeshi et al. teach that such angles of contact are equivalent alternative means known in the art to produce products having desired shapes.

Claims 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paul et al. (US 5,424,018) in view of either of Lippert (US 5,511,962) or Sirevicius (US 3,860,383) and in view of Hayeshi et al. (US 5,240,664).

Regarding claim 12, Paul et al. teach a method of varying the width of an extruded sheet product wherein a pivoting arm/shaping knife (10) is pivoted/rotated about point A, which is perpendicular to the axis of flow of the extruding material. The pivoting arm is substantially planar in shape and has a longitudinal molding surface extending to a distal end (Figure 6; col. 1, lines 50-64; col. 2, line 44-col. 3, line 14). Paul et al. do not discuss edge profiles. However, Lippert teaches a method of extrusion wherein a plurality of plugs (100) (102) and (104) (Figure 3) are employed to control the edge profile of an extruded sheet and Sirevicius teaches a variety of edge profile blocks are known in the art (Figure 5-Figure 9).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Paul et al. and to have employed varying edge profile shapes as suggested by either of Lippert or Sirevicius for the purpose of producing a wide variety of viable products with desired edge profiles.

Paul does not teach rotating about an axis oblique to the flow of the resin. However, Hayeshi et al. teach and suggest that it is known in the art that plastic material may be deformed in various directions such as from an inclined/oblique direction, as required, to produce a desired shape (col. 7, lines 44-49).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the teaching of Paul et al. and to have contacted the extruding polymer at various angles relative to the flow of molten material, including perpendicular to the flow and oblique/inclined to the flow since Hayeshi et al. teach that such angles of contact are equivalent alternative means known in the art to produce products having desired shapes.

As to claim 19, Paul et al. extrude plastic (col. 1, lines 15-26).

As to claim 20, the leading edge of Paul's arm (10) is reasonably interpreted as a wedge that cuts into the flow of material.

As to claim 21, Paul et al. move the arm (10) back and forth as required to produce the desired width product.

Claims 12-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yada et al. (US 5,229,054) in view of Takemori et al. (US 5,951,930) and Hayeshi et al. (US 5,240,664).

Regarding claims 12, 14, 15 and 18, Yada et al. teach the basic claimed process of producing a varying profile molded product by extruding molten material through an opening and shaping the product with a plurality of shaping knives (Figures 7-9). The shaping knives rotate about an axis which is parallel to the flow direction of the molten material. However, Takemori et al. (claims 1 and 2) and Hayeshi et al. (col. 7, lines 37-50) suggest that the means for shaping varying profiles may be rotated in a variety of directions relative to the flow of material including perpendicular and oblique/inclined angles. Further, the examiner notes that the shaping knives are reasonably interpreted as being substantially planar and having a longitudinal molding surface. Alternatively, the examiner submits that the shape of the shaping

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knives would have been readily determined by the ordinarily skilled artisan to produce a desired product.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Yada et al. and to have rotated the shaping knives about an axis that is perpendicular and/or oblique to that of the flow of molten material since both Takemori et al. and Hayeshi et al. suggest such directional shaping means are an equivalent alternative means known in the art of extruding profiled shapes.

As to claims 13 and 19, Yada et al. employ plastic material (col. 6, line 56).

As to claims 16 and 20, the edges of the shaping knives are reasonably understood to be wedge shaped (Figures 7-9).

As to claims 17 and 20, Yada et al. move the shaping knives back and forth to produce the varying shaped profile (Figure 7-9).

Response to Arguments

Applicant's arguments filed October 22, 2007 have been considered, but are moot in view of the new grounds of rejection necessitated by the amendment.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Wollschlager whose telephone number is 571-272-8937. The examiner can normally be reached on Monday - Thursday 7:00 - 4:45, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. W./
Jeff Wollschlager
Examiner, Art Unit 1791

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/Christina Johnson/

Supervisory Patent Examiner, Art Unit 1791